

REMARKS

Claims 8-14 are pending. By this Amendment, the specification is amended. Reconsideration and allowance in view of the above amendments and following remarks are respectfully requested.

The February 16, 2007 Advisory Action states that the amendments to the drawings and the specification contained in the Amendment filed January 23, 2007 raise the issue of new matter. Applicant respectfully disagrees.

MPEP 6163.06 states: Lack of written description is an issue that generally arises with respect to the subject matter of a claim. If an applicant amends or attempts to amend the abstract, specification or drawings of an application, an issue of new matter will arise if the content of the amendment is not described in the application as filed. Stated another way, information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter. (Underlining added.)

The gap 3" between the rolls 3, 3' was clearly disclosed in the application as originally filed, for example, in the first paragraph of page 4, and was clearly shown in the drawings as originally filed. Therefore, the inclusion of the reference number 3" in the specification and drawing is not new matter.

The swivel or pivot 7' was also clearly disclosed in the application as originally filed, for example, in the fourth paragraph of page 4. The inclusion of the swivel or pivot 7' in the drawing is thus not new matter.

The aspiration connection 5' was clearly disclosed in the application as originally filed, for example, in the fifth paragraph on page 4. The inclusion of the aspiration connection in the drawing is not new matter.

Claims 8-14 are rejected under 35 U.S.C. § 103(a) over Takashi et al. (Japanese Patent Application Publication 2002-066362). The rejection is respectfully traversed.

Claim 8 recites a roll peeler for peeling material. The roll peeler comprises at least one pair of rolls in a housing; a feeding device for feeding the material to be peeled; and a pneumatic conveying device provided between the feeding device and a roll gap between the at least one pair of rolls. The pneumatic conveying device comprises a feed pipe. A lower end of the feeding device comprises a chute, and is arranged above a venturi tube of the feed pipe. An aspiration connection is provided on the housing and is on or above a roll level of the rolls.

MPEP § 2143 states: To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Takashi et al. disclose a suction fan 13 and a dust exhaust pipe 14 (see paragraph [0009] of the attached translation of Takashi obtained from the Japanese Patent Office website). Figures 1 and 3 of Takashi et al. show the suction fan 13 and the dust exhaust pipe 14 are provided below the husking rolls 7. Thus, the suction fan 13 and the exhaust pipe 14 do not correspond to the aspiration connection of Applicant's claim 8 as the suction fan 13 and the exhaust pipe 14 are not on or above the level of the husking rolls 7.

Takashi et al. also fail to disclose or suggest a venturi tube of a feeding pipe as recited in claim 8. As shown in Figures 3 and 4 of Takashi et al., there is no venturi tube in the pipe 36c that feeds grains to the gap between the husking rolls 7.

As Takashi et al. do not disclose or suggest, all features of Applicant's claim 8, Takashi et al. fail to present a *prima facie* case of obviousness against the claims. Claim 8 is therefore allowable.

Applicant's claims 9-14 recite additional features neither taught or suggested by the Takashi et al. patent. The claims are allowable for at least the same reasons discussed above with respect to claim 8, and for the additional features recited therein.

Reconsideration and withdrawal of the rejection of claims 8-14 under 35 U.S.C. § 103(a) over Takashi et al. are respectfully requested.

In view of the above amendments and remarks, it is respectfully submitted that all of the claims are allowable and the entire application is in condition for allowance.


Should the Examiner believe that anything further is necessary to place the application in condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: March 22, 2007

By:


John P. Darling
Registration No. 44,482

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620

Attachment:
Translation (JP 2002-066362)

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-066362

(43)Date of publication of application : 05.03.2002

(51)Int.Cl.

B02B 7/02

B02B 3/04

(21)Application number : 2000-261204

(71)Applicant : ISEKI & CO LTD

(22)Date of filing : 30.08.2000

(72)Inventor : MATSUMOTO TOSHIYUKI

SEIKE TAKEHARU

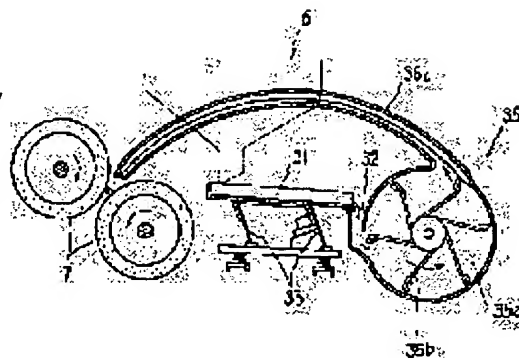
BEPPU TAKASHI

(54) HUSKER

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the hulling ratio of husking rolls.

SOLUTION: While grains are spread to the same width as the width of the husking rolls 7 and 7 and are transported by a feeder 31, the grains are accelerated by a chute 32 and are supplied to a thrower chamber 35a from the outer peripheral side in the radial direction. The grains are supplied approximately evenly while the grains are made into thinner layers over the entire width of the thrower chamber 35a of the same width as the width of the husking rolls 7 and 7. The grains are then sprung up by thrower vanes 35b of the same width as the width of the husking rolls 7 and 7 and are supplied through a thrower cylinder 35c to the husking rolls 7 and 7. The grains of the thin layers are then supplied approximately uniformly over the entire width of the husking rolls 7 and 7 and the husking at the high hulling ratio is carried out.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The hulling rolls 7 and 7 of a pair which rotate to an opposite direction mutually, and the feeder 31 conveyed while opening grain to the hulling rolls 7 and 7 and this width of face, It is set to thrower room 35a [in / for the grain conveyed with said feeder 31 / thrower equipment 35] of said hulling rolls 7 and 7 and this width of face from the chute 32 which carries out flowing-down supply from the radiation direction periphery section. Hulling equipment characterized by having bounded on the gap section of said hulling rolls 7 and 7, and supplying the grain of the film of the hulling rolls 7 and 7 and this width of face by thrower wing 35b of said thrower equipment 35.

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to hulling equipment.

[0002]

[Description of the Prior Art] It lets out the grain of a hopper 6 to the screw room 37 by the rotary bulb 36. conventional hulling equipment is shown in drawing 5 -- as -- unhulled rice -- The grain which it let out is conveyed in a longitudinal direction on the screw 38 of the screw room 37. It is the configuration which supplies to thrower room 35a of grain thrower equipment 35 from the horizontal side, has been over about grain by thrower wing 35b constituted by the hulling rolls 7 and 7 and this width of face, carries out grain lifting of the grain along with the conveyance slots 36d and 36d of thrower cylinder 35c, and --, and is supplied to the hulling rolls 7 and 7.

[0003]

[Problem(s) to be Solved by the Invention] If it is in equipment conventionally, since grain is supplied to thrower room 35a of thrower equipment 35 from the right-and-left longitudinal direction in alignment with the revolving shaft of thrower wing 35b To thrower wing 35b of the hulling rolls 7 and 7 and this width of face Grain will be supplied few as it keeps away from an inlet port to an entrance side mostly. Although grain was supplied to the hulling rolls 7 and 7, having bounded by thrower wing 35b of the hulling rolls 7 and 7 and this width of face, grain could not be equally supplied to the hulling roll 7 and 7 full one, but there was fault that a hulled ratio could not be made high.

[0004] Then, this invention tends to cancel such fault.

[0005]

[Means for Solving the Problem] The hulling rolls 7 and 7 of a pair which rotate to an opposite direction mutually in order that this invention may solve such a trouble, The feeder 31 conveyed while opening grain to the hulling rolls 7 and 7 and this width of face, It is set to thrower room 35a [in / for the grain conveyed with said feeder 31 / thrower equipment 35] of said hulling rolls 7 and 7 and this width of face from the chute 32 which carries out flowing-down supply from the radiation direction periphery section. It is characterized by having bounded on the gap section of said hulling rolls 7 and 7, and supplying the grain of the film of the hulling rolls 7 and 7 and this width of face by thrower wing 35b of said thrower equipment 35.

[0006]

[Function and Effect of the Invention] In this invention, it can supply equally [abbreviation] by conveying opening grain to the hulling rolls 7 and 7 and this width of face with a feeder 31, accelerating grain with chute 32, and supplying thrower room 35a from the radiation direction periphery side, making grain at a film thrower room 35a full [of the hulling rolls 7 and 7 and this width of face].

[0007] Subsequently, since grain is bounded by thrower wing 35b of the hulling rolls 7 and 7 and this width of face and the hulling rolls 7 and 7 are supplied through thrower cylinder 35c, it will be supplied equally [abbreviation] covering full [of the hulling rolls 7 and 7], and hulling can be carried out with a high hulled ratio.

[0008] As mentioned above, the grain of a film is supplied equally [the hulling roll 7 and abbreviation with 7 full one] through a feeder 31, chute 32, and thrower equipment 35, and hulling can be carried out with a high hulled ratio. Moreover, endurance can be raised, while the hulling rolls 7 and 7 are cooled and being able to continue a prolonged hulling activity, since high-speed air is sprayed on the hulling rolls 7 and 7 with supply of grain.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of the example of this invention shown in a drawing is explained. First, the whole hulling sorting machine configuration is explained based on drawing 1. mixed U.S. with which wind selection of the hulling sorting machine was carried out in the **** U.S. wind selection section 2 and the **** U.S. wind selection section 2 which carry out wind selection of the ***** from the hulling section 1 and the hulling section 1 -- unhulled rice -- it is constituted by the mixed-rice elevator 4 and brown-rice elevator 5 grade which carry out grain lifting of the rocking sorting section 3 which carries out separation sorting, and the grain to - brown rice.

[0010] the hulling section 1 -- unhulled rice -- it consists of the hulling rooms 8, diffusion room 8a, etc. to which the interior of a hopper 6 and the hulling rolls 7 and 7 is carried out. The **** U.S. wind selection section 2 is constituted by the **** U.S. wind selection box 9, the **** U.S. wind selection way 10, ***** 11, the **** U.S. receiving chute 12, the suction fan 13, and the dust exhaust pipe 14 grade.

[0011] Next, the rocking sorting section 3 is explained. Resemble the whole plate surface and the irregularity for sorting is formed in the multistage rocking sorting plates 15 and 15 and --, and make lateral 1 side into a high supply side, it makes the side else a low discharge side, and the opposite side is made into the low shake bottom by making into the high shake bottom the one side of the lengthwise direction which intersects perpendicularly with a longitudinal direction. It is the configuration which considers as the configuration toward which the 2-way of the rocking sorting plate 15 in every direction inclined, and carries out both-way rocking of the rocking sorting plates 15 and 15 and -- with a swinging arm and the rocking equipment which consists of rocking links at the longitudinal direction slanting upper and lower sides.

[0012] These rocking sorting plates 15 and 15 and the mixed rice of -- which the feed hopper is constituted at the supply side and sorted out by the **** U.S. receiving chute 12 are supplied to the rocking sorting plates 15 and 15 and -- from a feed hopper via a mixed-rice elevator 4, the mixed U.S. hopper 24, the distribution feeding chute 16, and the distribution case 17. the unhulled rice which the rocking sorting plates 15 and 15 and the mixed rice supplied to -- carry out channeling distribution of the small brown rice with heavy specific gravity at the shake bottom by relation, such as size of a grain shape, size of specific gravity, and size of coefficient of friction, and it is large-sized as compared with brown rice, and the unhulled rice with light specific gravity carries out channeling distribution at the shake bottom, and is not divided into the pars intermedia -- while the mixed rice of - brown rice carries out channeling distribution, it sorts out. the brown rice dashboard 18 with which a deer is carried out and such grain sorted out is prepared in the discharge side of the rocking sorting plate 15, and unhulled rice - - it is divided with a dashboard 19 and taken out.

[0013] The taken-out brown rice is taken out outside the plane through brown rice ***** 20, the brown rice passage 21, and a brown-rice elevator 5, and through mixed U.S. ***** 22, the mixed U.S. passage 23, the **** U.S. receiving chute 12, a mixed-rice elevator 4, the mixed U.S. hopper 24, the distribution feeding chute 16, and the distribution case 17, mixed rice is supplied to the rocking sorting plates 15 and 15 and --, and is carried out a reelection exception. moreover, the taken-out unhulled rice - - ***** 25 and unhulled rice -- passage 26 and unhulled rice -- pass the grain lifting machine 27 -- it is the configuration that carry out grain lifting to the hulling section 1, it is returned to it, and hulling for the second time is made.

[0014] Next, other examples of the hulling section 1 are explained based on drawing 2. The grain supply path 28 is arranged like the previous line of the hulling rolls 7 and 7. This grain supply path 28 is constituted by said hulling rolls 7 and 7 and this width of face. The nozzle 29 which is open for free passage to the turbo fan (illustration abbreviation) is arranged from the start edge side. It is the

configuration which high-speed air spouts from a nozzle 29, and the grain which flowed into the start edge side of the grain supply path 28 is conveyed to a termination side by the high-speed air from a nozzle 29 at high speed, the hulling rolls 7 and 7 are supplied, and air is discharged from the degassing 30 and 30 by the side of termination, and --. In addition, the high-speed air supplied to the grain supply path 28 is the configuration that it is adjusted by a control valve (illustration abbreviation) etc., and the bearer rate of grain can be adjusted freely.

[0015] the start edge side of said grain supply path 28 -- unhulled rice -- grain is supplied through a hopper 6, a feeder 31, and the inclined chute 32. This feeder 31 and chute 32 are constituted by the same width of face as the hulling rolls 7 and 7, and the feeder 31 is supported free [rocking] by the rocking equipments 33 and 33. unhulled rice -- if grain is supplied to a feeder 31 from a hopper 6, extend to a film broadly, conveying by rocking movement with a feeder 31, and pass chute 32 -- the grain supply path 28 is supplied.

[0016] It becomes the film of one layer of abbreviation from chute 32 at the grain supply path 28, and grain is supplied, high-speed conveyance is carried out by the air of the high speed from a nozzle 29 at a termination side, grain is shockingly supplied to the gap section of the hulling rolls 7 and 7, and hulling is carried out with the hulling rolls 7 and 7 of a pair which rotate to opposite ** mutually. Fall supply is carried out at downward diffusion room 8a, ***** by which hulling was carried out is diffused with the diffusion plate 34, and wind selection is carried out on the downward **** U.S. wind selection way 10.

[0017] As mentioned above, grain aligns one grain of abbreviation at a time to full [of the hulling rolls 7 and 7] from the grain supply path 28, it is supplied equally, hulling is carried out with a high hulled ratio, and hulling efficiency can be raised. Moreover, endurance can be raised, while air is sprayed on the hulling rolls 7 and 7, being cooled, preventing the temperature rise of the hulling rolls 7 and 7 and being able to continue a prolonged hulling activity, since grain is supplied to the hulling rolls 7 and 7 by high-speed air.

[0018] Next, the example shown in drawing 3 - drawing 5 is explained. It is good also as a configuration which supplies the grain used as the film of one layer of abbreviation to thrower equipment 35 via a feeder 31 and chute 32, supplies to the hulling rolls 7 and 7 from thrower equipment 35, and carries out hulling. It has bounded by thrower wing 35b, and it conveys along the conveyance slot (illustration abbreviation) of thrower cylinder 35c, the gap section of the hulling rolls 7 and 7 is supplied [the radiation direction periphery section to grain is supplied to thrower room 35a in thrower equipment 35 from chute 32,] shockingly, and hulling is carried out with the hulling rolls 7 and 7 of a pair which are rotating to opposite ** mutually.

[0019] A deer is carried out, it conveys, opening grain to a longitudinal direction vibrating with a feeder 31, chute 32 is supplied, and thrower room 35a is supplied, accelerating grain with the inclined chute 32 further. Then, grain can be made at a film full [of thrower room constituted by hulling rolls 7 and 7 and this width of face 35a], and it can supply equally [abbreviation], subsequently has bounded by thrower wing of hulling rolls 7 and 7 and this width of face 35b, it can supply equally to full [of the hulling rolls 7 and 7] through thrower cylinder 35c, and hulling can be carried out with a high hulled ratio.

[0020] As mentioned above, from thrower equipment 35, grain can be made into a film, full [of the hulling rolls 7 and 7] can be supplied equally [abbreviation], and hulling can be carried out with a high hulled ratio. Moreover, since grain is supplied to the hulling rolls 7 and 7 by high-speed air, the hulling rolls 7 and 7 can be cooled, a prolonged hulling activity can be continued, and endurance can be raised.

[0021] equipment is conventionally shown in drawing 5 -- as -- unhulled rice -- it is the configuration which lets out the grain of a hopper 6 to the screw room 37 by the rotary bulb 36, subsequently conveys on the screw 38 of the screw room 37, supplies grain from the horizontal side of thrower room 35a of thrower equipment 35, has been over along with the conveyance slots 36d and 36d of thrower cylinder 35c, and -- by thrower wing 35b, and is supplied to the hulling rolls 7 and 7.

[0022] Therefore, since conveyance supply of the grain was carried out in accordance with the revolving shaft of thrower wing 35b, grain will be supplied few as it keeps away from an inlet port to the entrance side of thrower wing 35b of thrower room 35a mostly, grain could not be equally supplied to the hulling

roll 7 and 7 full one, but there was fault that a hulled ratio fell.

[0023] however -- this example -- above -- vibration of a feeder 31 -- grain -- conveying -- **** -- by extending to a film broadly, accelerating with the inclined chute 32, and supplying thrower room 35a from the radiation direction periphery section Since the grain of a film can be equally supplied to the thrower room 35a full of the hulling rolls 7 and 7 and this width of face, it has bounded by thrower wing 35b of this width of face and this grain is supplied to the hulling rolls 7 and 7 Grain is equally supplied to full [of the hulling rolls 7 and 7], and hulling can be carried out with a high hulled ratio.

[0024] Moreover, as shown in drawing 6, it is good also as a configuration which is made to collide with the bottom inclined plane section of the single hulling roll 7 which is rotating grain in the direction of an arrow head by high-speed air at high speed (for example, speed per second 50-80m), and carries out hulling at the grain supply path 28. ***** by which hulling was carried out is supplied to the downward **** U.S. wind selection section 3, wind selection is carried out via the grain supply path 28 from a turbo fan (illustration abbreviation) by degassing 30 and 30 and the sorting wind which flows from --, and fall sorting of mixed rice, **, and the chaff is carried out in the ***** U.S. receiving chute 39, ***** 11, and the chaff receiving chute 40.

[0025] As mentioned above, since grain aligns in the shape of one grain and is equally supplied to full [of the hulling roll 7] from the grain supply path 28, hulling can be carried out with a high hulled ratio, and the hulling rolls 7 and 7 can be cooled by high-speed air, the temperature rise of the hulling rolls 7 and 7 can be prevented, and endurance can be raised.

[0026] Moreover, as shown in drawing 7, it is good also as a configuration which the grain conveyed with high-speed air by the grain supply path 28 is made to collide with the lower inclined plane section of the single hulling roll 7 which is rotating in the direction of an arrow head, and carries out hulling. ***** by which hulling was carried out is supplied to the downward **** U.S. wind selection section 3, wind selection of the ***** is carried out by the sorting wind sent via the grain supply path 28 from the turbo fan (illustration abbreviation), fall sorting of mixed rice, **, and the chaff is carried out through ***** 41 and 41 and -- at the mixed U.S. receiving chute 39 and ***** 11, and chaff is discharged outside the plane through a dust exhaust pipe 14.

[0027] As mentioned above, from the grain supply path 28, grain aligns to full [of the hulling roll 7] in the shape of one grain, it is supplied equally, and hulling is carried out with a high hulled ratio. By moreover, the high-speed air which occurs with a turbo fan (illustration abbreviation) and is sent via the grain supply path 28 Wind selection of shocking supply on the hulling roll 7 of grain and ***** and discharge of chaff outside the plane can be performed, and the whole equipment can be simplified, and the hulling rolls 7 and 7 are cooled, and endurance can be raised.

[0028] Next, based on drawing 8, the flare adjustment of the grain lifting belt 42 of the belt rise-and-fall mold mixed-rice elevator 4 is explained. In what was constituted so that which roller shaft 44 might be oppressively supported with a spring 45 and a load might be applied to the grain lifting belt 42 the upper and lower sides of the grain lifting case 43 of the belt rise-and-fall mold mixed-rice elevator 4 -- It supported so that the vertical migration of the roller shaft 44 with which the grain lifting roller 46 is attached could be carried out along with the long hole of the grain lifting case 43, and in support of the roller shaft 44, the spring support plate (above) 48 is fixed to these axial support plates 47 and 47 with the axial support plates 47 and 47.

[0029] Make the accommodation bolts 49 and 49 meet in the vertical direction at the up lateral surface of the grain lifting case 43, and it arranges. Support these accommodation bolts 49 and 49 free [rotation] with a bracket 50, and springs 45 and 45 are ***** (ed) to the pars intermedia of the accommodation bolts 49 and 49. The spring support plates (above) 48 and 48 are inserted in the accommodation bolts 49 and 49 above springs 45 and 45, and it has the roller shaft 44 furnished with the grain lifting roller 46 with springs 45 and 45, and is supporting in the shape of raising. **** the spring support plates (below) 51 and 51 arranged under these springs 45 and 45 in the accommodation bolts 49 and 49, and it fits in. The upper part of the spring support plates (below) 51 and 51 is bent towards the upper part so that the accommodation bolts 49 and 49 may be met. The upper limit section of the spring support plates (below) 51 and 51 is considered as the configuration which can move up and down along

with the lateral surface of said spring support plates (above) 48 and 48, and the accommodation aperture 52 is *****ed) to the spring support plates (below) 51 and 51.

[0030] As a deer is carried out and it is shown in drawing 8, the roller shaft 44 is caudad moved along with the long hole of the grain lifting case 43, and the grain lifting belt 42 is almost rolled with the grain lifting roller 46, and it supports. Subsequently, rotation actuation of the accommodation bolts 49 and 49 is carried out at the tension side, and migration accommodation of the spring support plates (below) 51 and 51 is carried out in the upper part. Then, the spring support plates (below) 51 and 51 move up, carrying out increment accommodation of the tension of springs 45 and 45 supporting the lower limit of springs 45 and 45, and the location where the accommodation apertures 52 and 52 of the spring support plates (below) 51 and 51 and the spring support plates (above) 48 and 48 agreed turns into a proper tension location of springs 45 and 45.

[0031] Thus, it faces adjusting the tension of the grain lifting belt 42, and by agreement with the accommodation apertures 52 and 52 of the spring support plates (below) 51 and 51, and the spring support plates (above) 48 and 48, it can inspect that it is in a proper accommodation condition visually easily, and tension accommodation of the grain lifting belt 42 can be performed easily.

[0032] In addition, the edge of said spring support plate (above) 48 may be extended outside, as an imaginary line shows, it may consider as the configuration which the upper limit section of the spring support plate (below) 51 which moved up contacts, and after the upper limit section of the spring support plate (below) 51 which was adjusted with the accommodation bolt 49 and moved up has contacted the spring support plate (above) 48, you may constitute so that the proper tension of springs 45 and 45 may be obtained.

[0033] Next, based on drawing 9, other examples of the flare adjustment of the grain lifting belt 42 are explained. The roller shaft 44 with which the grain lifting roller 46 is attached was supported free [vertical migration] along with the long hole of the grain lifting case 43, the axial support plates 47 and 47 were attached in the roller shaft 44, and the spring support plate 53 with the accommodation aperture 52 for convention localization is attached in these axial support plates 47 and 47. While supporting the accommodation bolts 49 and 49 to the bracket 50 prepared in the upper part of the grain lifting case 43, enabling free rotation and infixing springs 45 and 45 in the pars intermedia of the accommodation bolts 49 and 49, interior was carried out so that a spring 45 and the 45 whole might be surrounded with said spring support plates 53 and 53, and movable plates 54 and 54 are ****ed in the lower limit section of the accommodation bolts 49 and 49, and it has fitted into it.

[0034] A deer is carried out, rotation actuation of the accommodation bolts 49 and 49 is carried out at the tension side, and migration accommodation of the movable plates 54 and 54 is carried out in the upper part. Then, movable plates 54 and 54 move up, carrying out increment accommodation of the tension of springs 45 and 45 supporting the lower limit of springs 45 and 45, the location where the accommodation apertures 52 and 52 of movable plates 54 and 54 and the spring support plates 53 and 53 agreed can turn into a proper tension location of springs 45 and 45, and can inspect the proper accommodation condition of springs 45 and 45 visually easily, and can make belt tension accommodation easy.

[0035] Next, based on drawing 10, other examples of the flare adjustment of the grain lifting belt 42 are explained. The roller shaft 44 with which the grain lifting roller 46 is attached is supported free [vertical migration] along with the long hole of the grain lifting case 43, the axial support plates 47 and 47 are attached in the roller shaft 44, the spring support plates (above) 48 and 48 are attached in these axial support plates 47 and 47, and insertion support of the hole of these spring support plates (above) 48 and 48 is carried out at the after-mentioned accommodation bolts 49 and 49. The accommodation bolts 49 and 49 are supported to the bracket 50 prepared in the upper part of the grain lifting case 43, enabling free rotation. Springs 45 and 45 are infixed in the pars intermedia of the accommodation bolts 49 and 49, and movable plates 54 and 54 are ****ed in the lower limit section of the accommodation bolts 49 and 49, and it fits into it. Among said spring support plates (above) 48 and 48 and movable plates 54 and 54 It equipped with the colors 55 and 55 constituted by the flat spring, and a spring 45 and the 45 whole are covered with these colors 55 and 55.

[0036] A deer is carried out, rotation actuation of the accommodation bolts 49 and 49 is carried out at the tension side, and migration accommodation of the movable plates 54 and 54 is carried out in the upper part. Then, movable plates 54 and 54 move up, carrying out increment accommodation of the tension of springs 45 and 45 supporting the lower limit of springs 45 and 45. Press support of the roller shaft 44 which has attached the grain lifting roller 46 with springs 45 and 45 is carried out from a lower part. Colors 55 and 55 move upwards with movable plates 54 and 54, the condition that the upper limit of colors 55 and 55 contacted the inferior surface of tongue of the spring support plates (above) 48 and 48 serves as a proper tension location of springs 45 and 45, and the proper accommodation condition of springs 45 and 45 can be inspected visually easily. Moreover, if flare accommodation of the accommodation bolts 49 and 49 becomes superfluous, since the colors 55 and 55 which consist of a flat spring will deform by flexion, the superfluous accommodation condition of a belt can be inspected visually easily and can be prevented.

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The cutting side elevation of the whole hulling sorting machine.

[Drawing 2] The cutting side elevation of an important section.

[Drawing 3] The whole cutting side elevation.

[Drawing 4] The cutting side elevation of an important section.

[Drawing 5] The cutting side elevation of the important section of conventional equipment.

[Drawing 6] The cutting side elevation of an important section.

[Drawing 7] The cutting side elevation of an important section.

[Drawing 8] The cutting front view of an important section, a side elevation.

[Drawing 9] The cutting front view of an important section, a side elevation.

[Drawing 10] The cutting front view of an important section, a side elevation.

[Description of Notations]

1 Hulling Section

2 **** U.S. Wind Selection Section

3 Rocking Sorting Section

4 Mixed-rice Elevator

5 Brown-rice Elevator

6 Unhulled Rice -- Hopper

7 Hulling Roll

8 Hulling Room

9 **** U.S. Wind Selection Box

10 **** U.S. Wind Selection Way

11 *****

12 **** U.S. Receiving Chute

13 Suction Fan

14 Dust Exhaust Pipe

15 Rocking Sorting Plate

16 Distribution Feeding Chute

17 Distribution Case

18 Brown Rice Dashboard

19 Unhulled Rice -- Dashboard

20 Brown Rice *****

21 Brown Rice Passage

22 Mixed U.S. *****

23 Mixed U.S. Passage

24 Mixed U.S. Hopper

25 *****

26 Unhulled Rice -- Passage

27 Unhulled Rice -- Grain Lifting Machine
28 Grain Supply Path
29 Nozzle
30 Degassing
31 Feeder
32 Chute
33 Rocking Equipment
34 Diffusion Plate
35 Thrower Equipment
35a Thrower room
35b Thrower wing
35c Thrower cylinder
36 Rotary Bulb
37 Screw Room
38 Screw

[Translation done.]